

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT - RENEWAL

PERMITTEE

R. A. Cullinan & Son, Inc.
Attn: Mr. C. Scott Ketcham
121 West Park Street
Tremont, Illinois 61568

Application No.: 75090052

I.D. No.: 179809AAD

Applicant's Designation: ASPHALT

Date Received: November 10, 2005

Subject: Asphalt Plant

Date Issued: August 17, 2006

Expiration Date: August 17, 2011

Location: Highway I-155, Hopedale, Tazewell County, 61747

Permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of one natural gas/fuel oil #2-fired, drum-mix, asphalt plant with baghouse, two 25,000-gallon liquid asphalt storage tanks, one mineral filler tank silo, and one stone crushing plant pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued to limit the emissions from the asphalt plant to less than major source thresholds (i.e., less than 100 tons/year of carbon monoxide (CO)). As a result, the source is excluded from requirements to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit are described in Attachment A.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes the current permit(s) issued for this location.
- 2a. Pursuant to 35 Ill. Adm. Code 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 Ill. Adm. Code 212.122, except as allowed by 35 Ill. Adm. Code 212.123(b) and 212.124.
- b. Pursuant to 35 Ill. Adm. Code 212.206, no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period to exceed 0.15 kg of particulate matter per MW-hour of actual heat input from any fuel combustion emission unit (e.g., asphalt tank heaters and boilers associated with this drum-mix asphalt plant) using liquid fuel exclusively (0.10 lbs/mmBtu).

- c. Pursuant to 35 Ill. Adm. Code 212.206, no person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 Ill. Adm. Code 212.301 and 212.314.
- d. Pursuant to 35 Ill. Adm. Code 212.321(a), no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 Ill. Adm. Code 212.321.
- 3a. Pursuant to 35 Ill. Adm. Code 214.122(b)(2), no person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any new fuel combustion source (e.g., asphalt tank heaters and boilers associated with this drum-mix asphalt plant) with actual heat input smaller than, or equal to, 73.2 MW (250 mmBtu/hour), burning liquid fuel exclusively To exceed 0.46 kg of sulfur dioxide per MW-hr of actual heat input when distillate fuel oil is burned (0.3 lbs/mmBtu).
- b. Pursuant to 35 Ill. Adm. Code 214.301, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm.
- 4. Pursuant to 35 Ill. Adm. Code 215.301, no person shall cause or allow the discharge of more than 8.0 lbs/hr of organic material into the atmosphere from any emission unit. If no odor nuisance exists then this limitation shall only apply to photochemically reactive material as defined in 35 Ill. Adm. Code 211.4690.
- 5a. The baghouse shall be in operation at all times when the associated drum dryer is in operation and emitting air contaminants.
- b. The Permittee shall follow good operating practices for the baghouse, including periodic inspection, routine maintenance and prompt repair of defects.
- c. The surface moisture content of the aggregate as to be processed in the crushed crushing plant associated with the drum-mix asphalt plant shall be at least 1.5% by weight. The Permittee shall show compliance with this requirement as follows:
 - i. Water sprays shall be used on the emission units associated with the crushing plant (e.g., crushers, conveyors, and stockpiles, etc.) as necessary, except when weather conditions are below or expected to fall below freezing temperatures, to produce a moisture content of 1.5% by weight or higher to reduce particulate matter emissions; or

- ii. Demonstrate compliance with Condition 5(c) by following the testing requirements of Condition 9(c).
- 6a. The drum mixer and drum dryer shall only be operated with natural gas, or distillate fuel oil grades No. 1 and 2 (i.e., diesel) as the fuels. The use of any other fuel in the drum mixer and drum dryer requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.
- b. Boilers and tank heaters associated with the drum-mix asphalt plant shall only be operated with natural gas or distillate fuel oil grades No. 1 and 2 (i.e., diesel) as the fuels.
- c. At the above location, the Permittee shall not keep, store, or utilize in the drum-mix asphalt plant:
 - i. Distillate fuel oil (Grade No. 1 and 2) with a sulfur content greater than the larger of the following two values:
 - A. 0.28 weight percent, or
 - B. The Wt percent given by the formula: Maximum Wt percent sulfur = $(0.000015) \times (\text{Gross heating value of oil, Btu/lb})$.
 - ii. Organic liquid by-products or waste materials shall not be used in the drum-mix asphalt plant without written approval from the Illinois EPA.
 - iii. The Illinois EPA shall be allowed to sample all fuels stored at the above location.
- 7. In the event that the operation of this source results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the nuisance.
- 8a. Emissions and operation of the drum-mix asphalt plant shall not exceed the following limits:
 - i. Asphalt Production Limits:

Asphalt Concrete Production (Tons/Mo)	Asphalt Concrete Production (Tons/Yr)	Sulfur Content of Fuel Oil #2 (% Weight)
130,000	640,000	0.28

- ii. Emissions from Drum Mixer/Dryer:

<u>Pollutant</u>	<u>Emission Factor (Lb/Ton)</u>	<u>Emissions (Tons/Mo)</u>	<u>Emissions (Tons/Yr)</u>
Particulate Matter (PM)	0.033	2.20	10.6

<u>Pollutant</u>	Emission	Emissions	
	Factor (Lb/Ton)	(Tons/Mo)	(Tons/Yr)
Carbon Monoxide (CO)	0.130	8.50	41.6
Nitrogen Oxide (NO _x)	0.055	3.60	17.6
Sulfur Dioxide (SO ₂)	0.011	0.80	3.6
Volatile Organic Material (VOM)	0.032	<u>2.10</u>	<u>10.3</u>

These limits are based on maximum asphalt production and standard AP-42 emission factors.

- b. This permit is issued based on negligible emissions of VOM from the mineral filler tank. For this purpose, emissions shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 tons/year.
- c. This permit is issued based on negligible emissions of VOM from the two liquid asphalt storage tanks. For this purpose emissions from each emission source, shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 tons/year.
- d. Emissions and operation of the stone crushing plant shall not exceed the following limits:
 - i. Total aggregate, Reclaimed Asphalt Pavement (RAP) and recycled concrete throughput:

Stone Crusher Throughput	
<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
50,000	250,000

- ii. Particulate Matter Emissions from the Crushing Plant:

Equipment	Emission	Particulate Matter	
	Factor (Lb/Ton)	Emissions (Tons/Month)	(Tons/Year)
1 Crusher	0.0012	0.02	0.15
3 Screens	0.0022	0.14	0.83
Conveyors	0.00014	<u>0.04</u>	<u>0.18</u>
Totals:		0.20	1.16

These limits are based on the maximum crusher throughput and standard controlled emission factors (with wet suppression or aggregate moisture content of 1.5% minimum) in Table 11.19.2-2 of AP-42.

- e. Compliance with annual limits shall be determined from a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).
- 9a. Pursuant to 35 Ill. Adm. Code 212.107, 212.109, and 212.110, testing for particulate matter emissions shall be performed as follows:

- i. For both fugitive and nonfugitive particulate matter emissions, a determination as to the presence or absence of visible emissions from emission units shall be conducted in accordance with Method 22, 40 CFR part 60, Appendix A, incorporated by reference in 35 Ill. Adm. Code 212.113, except that the length of the observing period shall be at the discretion of the observer, but not less than one minute. This Condition shall not apply to 35 Ill. Adm. Code 212.301.
 - ii. Except as otherwise provided in 35 Ill. Adm. Code Part 212, and except for the methods of data reduction when applied to 35 Ill. Adm. Code 212.122 and 212.123, measurements of opacity shall be conducted in accordance with Method 9, 40 CFR Part 60, Appendix A, and the procedures in 40 CFR 60.675(c) and (d), if applicable, incorporated by reference in 35 Ill. Adm. Code 212.113, except that for roadways and parking areas the number of readings required for each vehicle pass will be three taken at 5-second intervals. The first reading shall be at the point of maximum opacity and second and third readings shall be made at the same point, the observer standing at right angles to the plume at least 15 feet away from the plume and observing 4 feet above the surface of the roadway or parking area. After four vehicles have passed, the 12 readings will be averaged.
 - iii. Measurement of particulate matter emissions from stationary emission units subject to 35 Ill. Adm. Code Part 212 shall be conducted in accordance with 40 CFR part 60, Appendix A, Methods 5, 5A, 5D, or 5E.
 - iv. The volumetric flow rate and gas velocity shall be determined in accordance with 40 CFR part 60, Appendix A, Methods 1, 1A, 2, 2A, 2C, 2D, 3, and 4.
 - v. Upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 Ill. Adm. Code Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA.
- b. Testing required by Condition 9(a) shall be performed by a qualified independent testing service.
 - c. The moisture content of a representative sample of the aggregate processed in the crushing plant associated with the drum-mix asphalt plant shall be measured at least once per week using ASTM Procedures (C566-67) for total moisture content of material.
- 10a. Inspections of the affected drum-mix asphalt plant and control systems equipment and operations shall be performed as necessary but at least once per week when the affected drum-mix asphalt plant is in operation to confirm compliance with the requirements of this permit.

- b. The water supply to the spray equipment shall be equipped with a metering device used to determine water usage for the control of particulate matter emissions.
 - c. Inspections of water spray equipment and operation (such as leaking, maintaining adequate flow, clogging of flow lines, etc.) shall be performed at least once per week when the crushing plant associated with the affected drum-mix asphalt plant is in operation.
- 11a. Pursuant to 35 Ill. Adm. Code 212.110(e), the owner or operator of an emission unit subject to 35 Ill. Adm. Code Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed.
- b. The Permittee shall maintain monthly records of the following items:
 - i. Records addressing use of good operating practices for the baghouse:
 - A. Operating logs for the affected drum-mix asphalt plant dryer baghouse, including operating data (pressure drop or stack condition), daily upon startup;
 - B. Records for periodic inspection of the baghouse with date, individual performing the inspection, and nature of inspection; and
 - C. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.
 - ii. Records addressing use of good operating practices for the crushing plant:
 - A. If the Permittee is relying on the requirements of Conditions 5(c)(ii) and 9(c) to demonstrate compliance with Condition 5(c), the Permittee shall maintain records of all moisture content tests performed including date, time, individual performing test, and location of sample (e.g., prior to crushing, stockpiles, etc.);
 - B. If the Permittee is relying on Condition 5(c)(i) to demonstrate compliance with Condition 5(c), the Permittee shall maintain operating logs for the water spray equipment, including dates and times of usage, malfunctions (type, date, and measures taken to correct), water pressure, and dates when there was at least 0.25" of rainfall during the preceding 24 hours and the water spray equipment was not operated; and
 - C. The Permittee shall maintain weekly records of water consumption in the spray equipment, as determined by the

meter required by Condition 10(b) and the amount of precipitation specified in Condition 10(c).

- iii. Asphalt concrete production (tons/month and tons/year);
 - iv. Aggregate throughput for the crushing plant (tons/month and tons/year);
 - v. Fuel Usage Records:
 - A. Total natural gas usage (Mft³/month and Mft³/year);
 - B. Distillate fuel oil usage (gallons/month and gallons/year); and
 - C. The sulfur content of the fuel oil used in the drum-mix asphalt plant (% weight), this shall be recorded for each shipment of oil delivered to the source.
 - vi. Monthly and Annual CO, NO_x, PM, SO₂, and VOM emissions from the drum-mix asphalt plant shall be maintained, based on asphalt production, fuel consumption, and crushing plant throughput and the applicable emission factors, with supporting calculations.
- c. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five (5) years from the date of entry and shall be made available for inspection and copying by the Illinois EPA and USEPA upon request. Any records retained in an electronic format (e.g., computer storage device) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to the Illinois EPA or USEPA request for records during the course of a source inspection.
- 12a. Pursuant to 35 Ill. Adm. Code 212.110(d), a person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from 35 Ill. Adm. Code 212.110 that will be used.
- b. If there is an exceedance of the requirements of this permit as determined by the record required by this permit, the Permittee shall submit a report to the Agency's Compliance and Systems Management Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences. This report should be sent to:
- c. Two (2) copies of required reports and notifications shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
5415 North University
Peoria, Illinois 61614

13. The assembly of this plant at a new location will require a construction permit. This permit must be obtained prior to commencing construction at the new location. For this purpose, a new location is defined as a location in Illinois at which the plant does not have a valid operating permit or authorization letter.
14. The operation of this plant at a location in Illinois other than a location identified in a valid operating permit or an authorization letter requires another operating permit or authorization from the Illinois EPA. This operating permit/authorization must be obtained prior to operating at such location.

It should be noted that the asphalt tank heaters and fuel oil #2 storage tanks are exempt from state permit requirements, pursuant to 35 Ill. Adm. Code 201.146(d) and (n)(3), respectively.

If you have any questions on this, please call Dwayne Booker at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:DLB:psj

Attachment

cc: IEPA, FOS Region 2
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from the asphalt plant and the crushing plant operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are below the level (e.g., 100 tons per year of CO) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled, and control measures are more effective than required in this permit.

<u>Emission Units</u>	E M I S S I O N S (Tons/Year)				
	<u>NO_x</u>	<u>SO₂</u>	<u>CO</u>	<u>PM</u>	<u>VOM</u>
Crushing Plant	---	---	---	1.16	---
Drum Mixer/Dryer	17.6	3.6	41.60	10.60	10.30
Asphalt Silos Loading & Truck Loadout	----	----	0.22	0.22	1.54
Total	17.6	3.6	41.82	11.76	11.62

DLB:psj